Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

CW#4: Interpreting Graphs

Geometry

Thursday September 10th

1. **Bridge Situation**

A group of workers are painting a bridge.

x = the number of workers

f(x) = the length of time it will take to paint the bridge.

1. Look at this situation. Sketch a graph to show how f(x) will depend on x.
2. What happens as the number of workers increases?
3. **Plumber Situation**

A plumber charges a fixed fee for coming to your house, then charges a fixed amount per hour on top of this.

t = the time the job takes in hours.

c(t) = the total cost of the plumber’s time in dollars

1. Sketch a graph to show how c(t) will depend on t.
2. Create a potential equation to model c(t).
3. Annotate your equation to explain the key features and what they mean.
4. **Cyclist situation**

A cyclist travels along a direct route from Chicago, IL to Gary IN.

c = the distance of the cyclist from Chicago in miles.

c(g) = the distance of they cyclist from Gary in miles

1. Sketch a graph to show how c(g) will depend on t.
2. Create a potential equation to model c(g).
3. Annotate your equation to explain the key features and what they mean.
4. Compare your equation in problem 2, to the equation for problem 3. What are the major differences?
5. **Movie Subscription Situation**

You get two movies free, but then you get charged at a fixed rate per movie.

v = the number of movies seen

d(v) = the total money spent in dollars

1. Sketch a graph to show how d(v) will depend on t.
2. Create a potential equation to model d(v).
3. Annotate your equation to explain the key features and what they mean.
4. **Internet Café Situation**

An Internet café charges a fixed amount per minute to use the Internet.

m = the number of minutes spent on the internet

c (m) = the cost of using the internet in dollars

1. Sketch a graph to show how c(m) will depend on t.
2. Create a potential equation to model c(m).
3. Annotate your equation to explain the key features and what they mean.
4. Based off your equation, how many minutes will $8 buy? Does the coat make sense? Why?
5. Kymani has 40 dollars and earns 10 dollars per day. Ahmad has 20 dollars and earns 10 dollars per day.
6. Graphically, show how much more money Kymani will have after 7 days.
7. Create two equations to model the amount of money Kymani and Ahmad have. Be sure to define your variables.
8. Based on your graph will Amhad ever have more money than Kymani? Explain why.
9. You plant two trees in your back yard. A maple and an Elm. The graph below shows how the two trees grow over time.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. After 10 days, how much taller is the elm?
2. What are the units for the average rate of change of each line?
3. Compare the average rates of change. What do you notice?
4. What conclusions can you draw about the two trees?